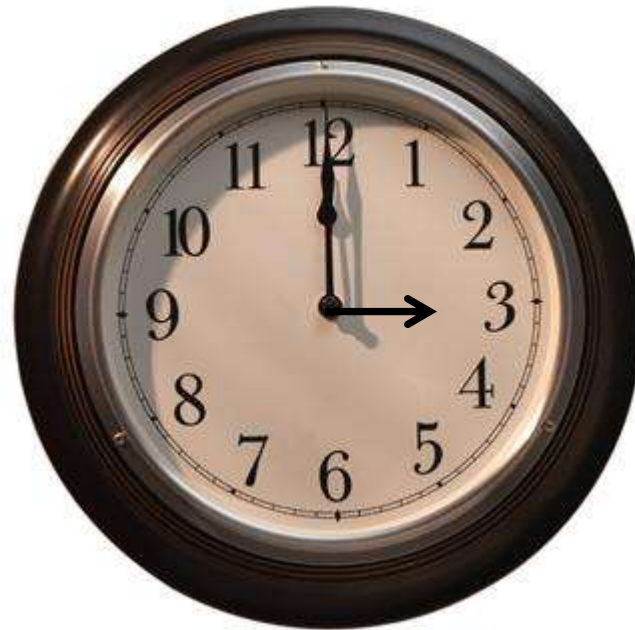




# Day 3

## Visual Models with Fractions

# Clock Fractions



# Clock Fractions



# Clock Fractions





# Clock Fractions

- Now let's try to use the clock faces to add and subtract faces.
- Play the game *Roll Around the Clock* with a partner or small group.

# Clock Fractions

- For each addition equation involving two addends on your recording sheet, write two related subtraction equations.
- For example, what is a related subtraction equation for  $2 + 3 = 5$ ?
- Can you use the clock face to solve  $\frac{5}{6} - \frac{1}{4}$ ?

# Race Marathon

- Refer to your marathon route picture as I tell you the following story.
- Based on this situation and by using the marathon route picture, first work individually for a few minutes and then continue with your group on The Marathon Investigation.
- Create a poster showing how your group thought about the problem.

# Race Marathon Student Work

- Refer to the student work in figure 1 and 3
- How do their methods compare with our methods?
- How did this context support visual models?



# Race Marathon Dialogue

- As the students are working, the teacher is monitoring their solution strategies.
- Read the teacher-student dialogue entitled “Conferring with Students at Work”
- What is the teacher doing to support student thinking?

# Race Marathon Dialogue

- After the students are done working in small groups, the teacher has different groups present their thinking.
- Read the teacher-student dialogue entitled “A Portion of the Math Congress”
- What strategies are used to support all students’ understanding of this idea?

# Minilesson using a Number String

- To support students who may not have fully grasped the previously shared solution or secure this strategy in students' minds, the following number string could be used

- $\frac{1}{2} \times 44$

- $\frac{1}{4} \times 44$

- $\frac{1}{8} \times 44$

- $\frac{5}{8} \times 44$

- $\frac{3}{8} \times 44$

- $\frac{7}{8} \times 44$

- $\frac{7}{12} \times 28$

# Number String Dialogue

- Read to the teacher-student dialogue entitled “A Portion of the Minilesson”
- Did the students use the same ideas as we shared?
- What moves is the teacher using to support all students’ understanding?

# R.A.C.E. Club Training Record Task

- The members of the R.A.C.E. club are training for next year's marathon. They train on Saturdays in a beautiful local park that has a three mile running track with markers to indicate the part of the track that has been completed. Several of the members decide to keep a record of their results.
- At this point in their training, some members of the team are only able to complete a portion of the track, while others run for quite a while. Of course, some also run faster than others and some have quite fast rates because they run only for a brief amount of time.

# R.A.C.E. Club Training Record Task

- Based on the number of minutes run and the circuits of the track completed, what is Maria's rate in minutes per circuit?
- Complete the remainder of the chart with a partner.
- Be certain to provide evidence of how you completed the chart.

# R.A.C.E Training Dialogue

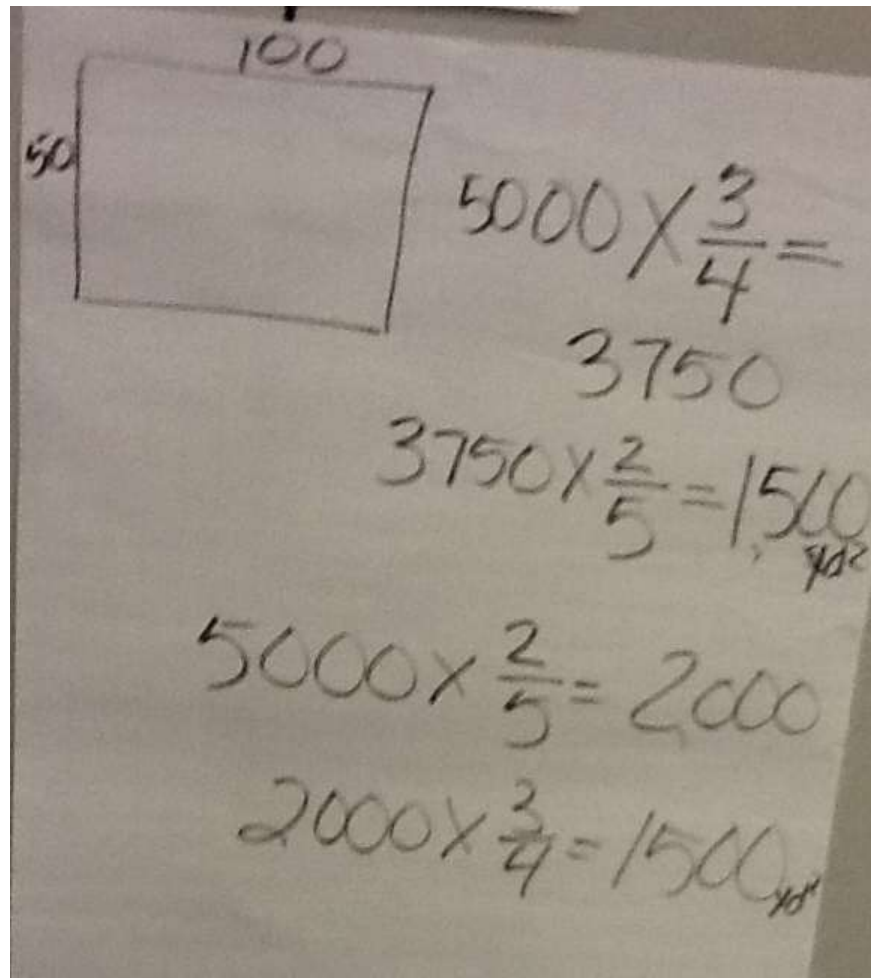
- Read the teacher – student dialogue entitled “A Portion of the Math Congress”
- What strategy is pursued to divide fractions other than invert and multiply?
- How do you feel about the way class ends?

# Playground and Blacktop Task

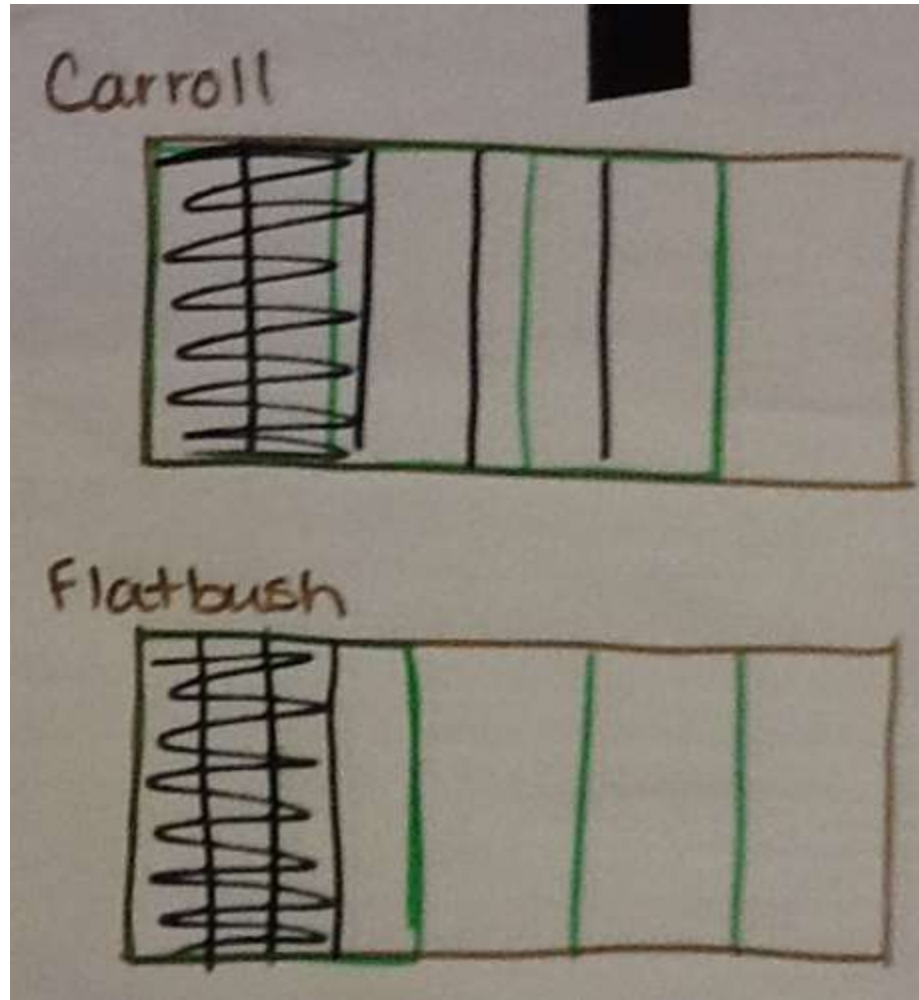
- Listen to the following scenario regarding a neighborhood in Brooklyn.
- Does everyone understand the scenario?
- First think individually about the playground and blacktop problem and then confer with a partner.
- Create a poster to share your thinking.
- Do a gallery walk of posters in the room and write any comments or questions on post-it notes.



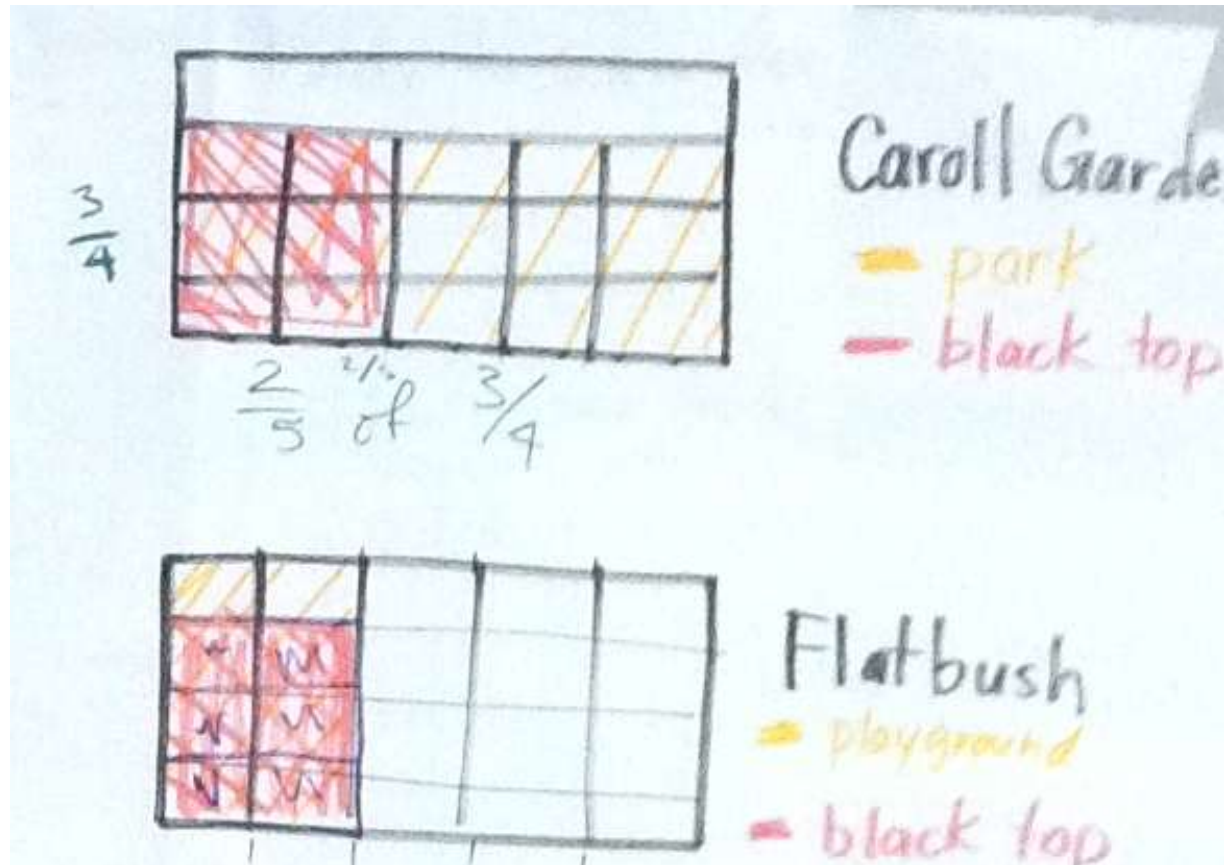
# Numerical Method



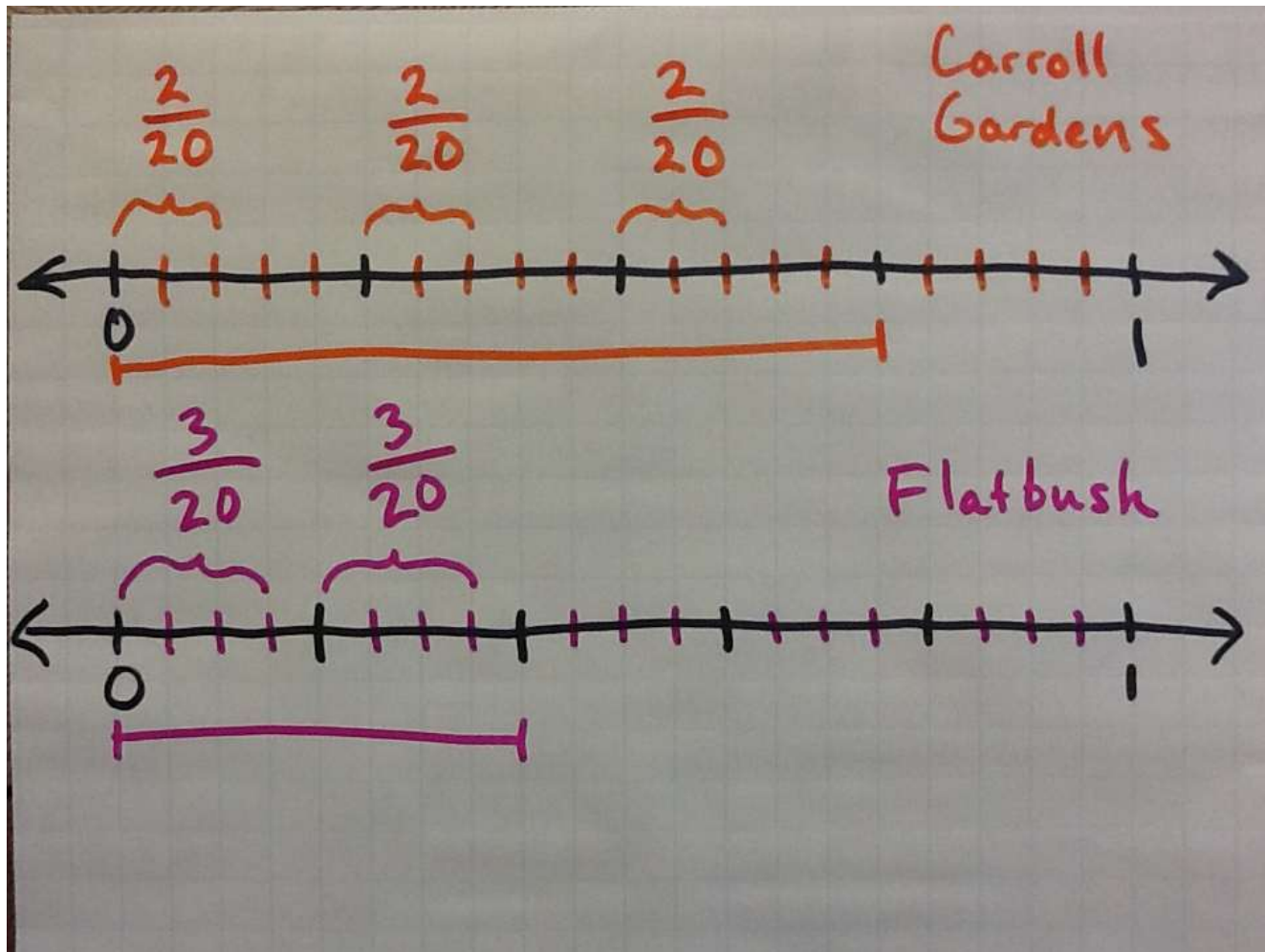
# Linear Method



# Area Method



# Number Line Method





# Playground and Blacktop Video

# Minilesson: Multiplication of Fractions

- This number string can help to build on the array model to understand multiplication of fractions.

- $\frac{1}{3} \times \frac{1}{5}$

- $\frac{1}{3} \times \frac{3}{5}$

- $\frac{2}{3} \times \frac{3}{5}$

- $\frac{1}{6} \times \frac{3}{5}$

- $\frac{5}{6} \times \frac{3}{5}$

- $\frac{5}{6} \times \frac{4}{5}$

- $\frac{7}{8} \times \frac{3}{4}$

# Grade 5 Standards and Progressions

- Read the grade 5 standards from CCSS and PACCC
- What activities have we done that relate to each standard?
- Read your assigned section from the progressions.
- Are there additional visual models within the progressions to which we did not elude?

# What's on the horizon?

- Solve the Lemonade Stand task using visual models.
- Solve the Oranges task using visual models.
- How do both of these tasks involve division but seem so different?